
A New Species of the Genus *Paederia* (Rubiaceae) from the Petriky Forest, Taolagnaro, Madagascar

Sylvain G. Razafimandimbison and Charlotte M. Taylor

Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166-0299, U.S.A.
srazafimandimbison@rschctr.mobot.org; ctaylor@rschctr.mobot.org

ABSTRACT. *Paederia taolagnarensis* Razafimandimbison & C. M. Taylor is described from Petriky, Taolagnaro, Madagascar. This new species is distinguished from other *Paederia* species of Madagascar by its cymose-paniculate inflorescences that are rather congested, showing “double” scorpioid cyme structure, and its thickened peduncles and pedicels. It grows on stabilized dunes in the Petriky region, Taolagnaro. A description and dichotomous key are provided.

RÉSUMÉ. *Paederia taolagnarensis* Razafimandimbison & C. M. Taylor a été décrite de la région de Petriky, Taolagnaro, Madagascar. Cette nouvelle espèce est distinguée des autres *Paederia* de Madagascar par ses inflorescences en panicule de cyme, qui sont plutôt arrondies et parfois ramifiées dichotomiquement, et ont des pédoncules et pédicelles épaisses. Elle pousse sur les dunes dans la région de Petriky, Taolagnaro. Sa description et une clé dichotomique ont été incluses.

The genus *Paederia* L. (Paederieae, Rubiaceae) is represented in Madagascar by about 12 species (Puff, 1991). Ten of these species are endemic to Madagascar, with two also found in the Mascarenes and on the African mainland. In his recent treatment of *Paederia* of Madagascar, Puff (1991) keyed and provided a morphological description for one specimen that appeared to be a new species, but he did not name this because that specimen had only fruits.

While identifying undetermined material of *Paederia* from Madagascar in the MO herbarium, we discovered a few herbarium specimens matching the undescribed species mentioned by Puff in his treatment of Madagascan *Paederia*. These specimens have flowers, allowing us to confirm that it is indeed undescribed. We describe this new species below.

Paederia L., belonging to the tribe Paederieae and subfamily Rubioideae, is a genus of lianas characterized by having an unpleasant odor when tissue is damaged, stamens inserted at two levels,

and winged or unwinged diaspores (Puff, 1991). For taxa with winged diaspores, each diaspore is suspended from the stout, filiform carpophore, which remains basally attached to the top of the pedicel (Puff, 1991).

Paederia taolagnarensis Razafimandimbison & C. M. Taylor, sp. nov. TYPE: Madagascar. Toliara: Taolagnaro, also called Fort-Dauphin, region of Manambaro, Petriky forest, ca. 15 km W-SW of Taolagnaro on stabilized dune sand, 25°04'S, 46°51'E, 9 Mar. 1989, R. Gereau, G. Schatz & N. Dumetz 3219 (holotype, MO 3766545; isotypes, P, TAN). Figure 1.

Haec species a congeneris madagascariensibus inflorescentia cymoso-paniculata congestiore interdum dichotome ramosa atque pedunculis pedicellisque crassis distinctur.

Lianas. Stems sparsely lenticellate, terete, ca. 2 mm diam., glabrous. Leaves decussate, widely ovate to widely oblong, 21–65 × 19–38 mm, rounded at base, rounded to acuminate or apiculate at apex, with 5 to 6 pairs of secondary veins, glabrous. Petioles 11–28 mm long, glabrous. Stipules interpetiolar, up to 1.5 mm long, triangular, appressed, densely pubescent on the distal part, apex acute or sometimes shallowly bifid. Inflorescences axillary, cymose-paniculate, rather congested, showing “double” scorpioid cyme structure, bearing 3 to 7 flowers; peduncles sparsely lenticellate, terete, 10–40 mm long, 0.7–1 mm diam., glabrous. Flowers 5-merous; pedicels terete, to 3 mm long, 0.5–0.6 mm diam.; receptacle glabrous. Calyx lobes 0.5–1 mm long, broadly triangular. Corolla tube whitish blue, infundibuliform, 8–10 mm long, ca. 1 mm diam., glabrous outside, inside glabrous below the middle and lanate above the middle, corolla lobes 2–3 mm, oblong, rounded and notched at apex, light purple with darker purple on base of the lobes, not rigid, margins crisped. Stamens inserted near the mouth of the corolla tube; filaments 0.04–0.08 mm, glabrous; anthers ca. 1.5 mm long, partially exerted. Style ca. 6 mm long; stigmas filiform. Ovary 2-loc-

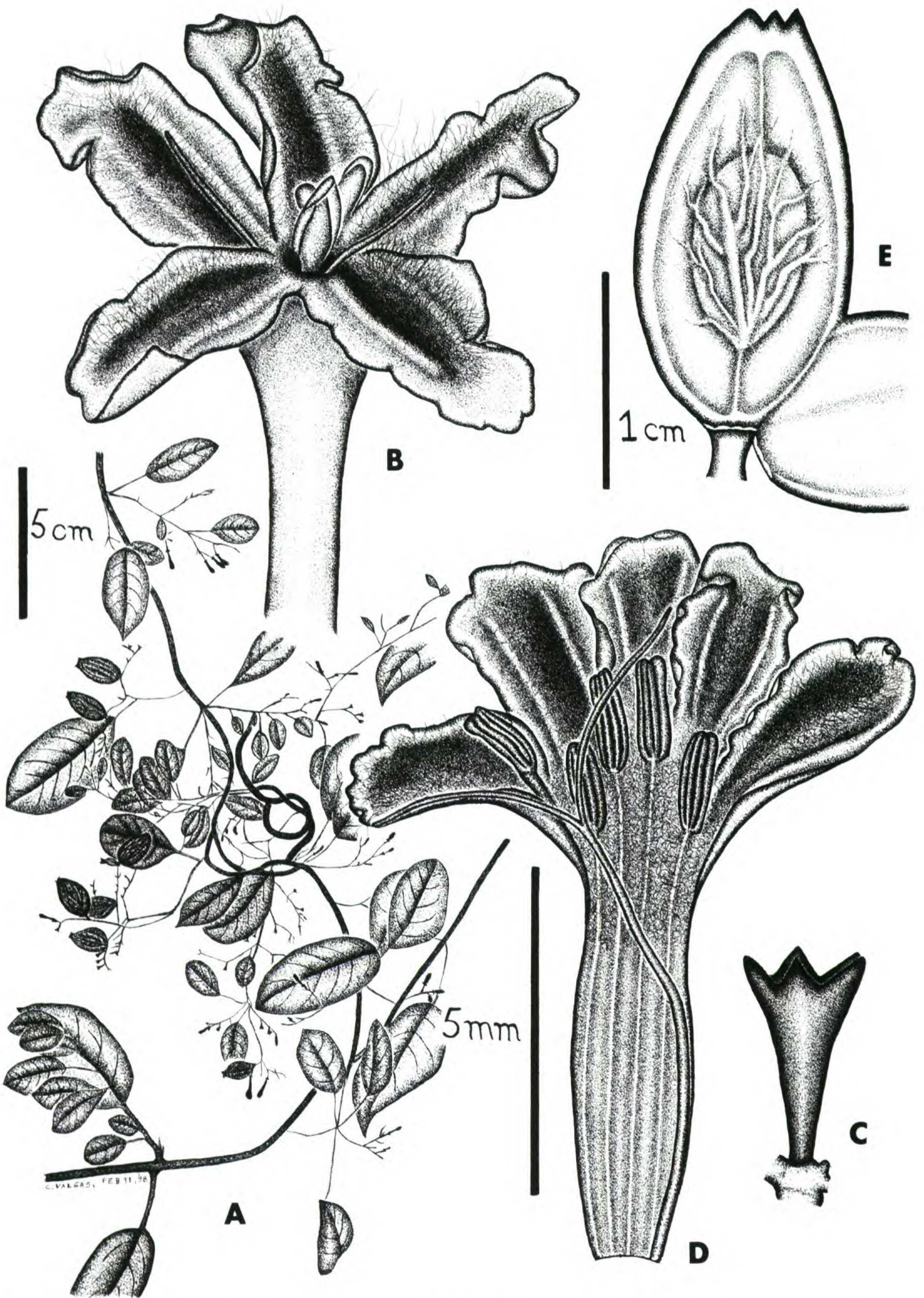


Figure 1. *Paederia taolagnarensis* Razafimandimbison & C. M. Taylor, based on Gereau *et al.* 3219. —A. Habit of plant in flower and fruit. —B. Corolla tube and parts of stigma and anthers. —C. Calyx and part of inflorescence. —D. Dissected corolla tube showing style and stigma as well as anther attachment. —E. Dissected fruit.

ular. Fruits 13–16 × 7–10 mm, laterally compressed, ovate-elliptic, glabrous, shiny, crowned by persistent calyx lobes; diaspores slightly smaller than fruit outline, wings ca. (1.5–)2–3 mm wide, seed-bearing portion 5.5–7 × 4–8 mm, black.

Distribution and habitat. *Paederia taolagnarensis* is only known from Petriky, Canton Manambaro, Taolagnaro, in the extreme southeastern corner of Madagascar, where it grows on stabilized sand dunes. These sands have a high titanium content and host other endemic species such as *Polyalthia pendula* LeThomas & Schatz (Annonaceae), *Kalanchoe rosei* R. Hamet & H. Perrier subsp. *serratifolia* Humbert (Crassulaceae), *Croton thouarsianum* H. Braun (Euphorbiaceae), *Tachia-denus longifolius* Scott Elliot (Gentianaceae), *Glad-iolus decaryi* Goldblatt (Iridaceae), and *Cryptocarya elliotii* Kostermans (Lauraceae). *Paederia taolagnarensis* is apparently also restricted to this habitat.

This particular habitat is found only in Petriky, Mandena, and St. Luce, Taolagnaro, Madagascar. Mandena and Petriky have been proposed as the site of a large surface-mining project for titanium. This development would probably lead to the extinction of any species whose total geographic distribution is restricted to the mine path (Lowry & Faber-Langendoen, 1991).

Paratypes. MADAGASCAR. **Toliara:** Fort-Dauphin region, SE of town of Petriky, forest near dune near end of QIT road, 25°05'S, 46°52'E, 2 Nov. 1989, *McPherson 14355* (MO, P, TAN), 25 m, 8 Dec. 1989, *McPherson & Dumetz 14690* (MO, P, TAN), 12 Dec. 1989, *Dumetz & McPherson 1092* (MO, P, TAN); Fort-Dauphin, *Scott Elliott 3060* [P. sp. MAD A] (BM, E, K, P).

KEY TO *PAEDERIA TAOLAGNARENSIS* AND *P. SAMBIRANENSIS*

We present below only an update to the last parts of the key given by Puff (1991) for Madagascan *Paederia*, to be inserted in leads 11 and 11*, and incorporating the floral information of *P. taolagnarensis*:

- 11. Fruits (5.5–)6–11 mm long, wings of diaspores 0.5–2 mm wide 13
- 11*. Fruits (11–)13–20 mm long, wings of diaspores (1.5–)2–3 mm wide 12
- 12. Inflorescence lax, peduncles and pedicels filiform and slender, pedicels (3–)5–17 mm long, calyx lobes (0.7–)1–1.8 × 0.3–0.6 mm, narrowly triangular to subulate; only known from Sambirano region (NW Madagascar) *Paederia sambiranensis*
- 12*. Inflorescence not so lax, peduncles and pedicels coarser, pedicels to 1 mm long; calyx lobes 0.5–1 mm long, broadly triangular; only known from littoral forests of Petriky, Manambaro, and Taolagnaro (SE Madagascar) *Paederia taolagnarensis*

Acknowledgments. We thank Roy Gereau for his help with the Latin description, P. Mick Richardson for his comments, and Nancy Hediger, who originally separated the unidentified specimens as new species. The fine illustration was drawn by Carlos Vargas, and its cost was borne by the Alumni Fund at MO.

Literature Cited

- Lowry, P. P., II & D. Faber-Langendoen. 1992. Overall Flora and Vegetation Study of the Mandena, St. Luce and Petriky regions. Unpublished Report for QITfer by Missouri Botanical Garden, St. Louis.
- Puff, C. 1991. Revision of the genus *Paederia* L. (Rubiaceae-Paederieae) in Africa and Madagascar. In C. Puff (editor), *The genus Paederia L.: A multidisciplinary study*. Opera Bot. Belg. 3: 293–322.